MYCOTAXON

Volume 107, pp. 383–390 *January–March 2009*

New species of *Digitoramispora* and *Spondylocladiopsis* from the forests of Western Ghats, India

J. Pratibha[1], S. Raghukumar[1] & D.J. Bhat[2]

jalmipratibha@rediffmail.com
s_raghukumar@mykotech.com bhatdj@rediffmail.com

[1]Myko Tech Pvt. Ltd.
Plot no. 12, Mapusa Industrial Estate, Mapusa, Goa – 403507, India

[2]Department of Botany, Goa University
Goa – 403 206, India.

Abstract – Two new species of hyphomycetes, *Digitoramispora tambdisurlensis* and *Spondylocladiopsis aseptata,* isolated from decaying plant litter collected from the Western Ghat forests of Tambdi Surla in Goa State, and Calicut in Kerala State, India, respectively, are described and illustrated.

Key words – biodiversity, anamorphic fungi, taxonomy, tropical forests

Introduction

During the course of studies on microfungi from forests of Western Ghats in southern India, two hitherto undescribed dematiaceous hyphomycete species, belonging to the genera *Digitoramispora* R.F. Castañeda & W.B. Kendr. and *Spondylocladiopsis* M.B. Ellis, were isolated from fallen and decaying plant litter. These fungi are described and illustrated.

Taxonomic descriptions

Digitoramispora tambdisurlensis Pratibha, Raghuk. & Bhat, **sp. nov.** Figs. 1, 2
MycoBank MB 512672

Ad fungos conidiales, hyphomycetes. Coloniae in substrato naturalis dispersae, atrobrunneae vel nigrae; mycelium partim superficialia, partim substrato immersum, ex hyphis laevibus, pallide brunneis, ramosis, septatis, 2–3 µm latis compositum. Stroma nullus. Coloniae in PDA-cultura irregulares, atro viridiae, gossypinus, reverses nigrae, margine serratus, diam. 2.2 cm aetate 10 dierum. Conidiophora mononematica, singula, erecta, recta vel leviter flexuosa, non-ramosa, atrobrunnea, aliquando prolongata, 22–320 × Cellulae conidiogenae monoblasticae, integratae, terminales, cylindricae vel lageniformes, 10–17.5 × 5–10 µm. Conidia muriformis, forma variabilia, saepe dorsiventraliter applanata, flabelliformis, atrobrunnea in centrum cum ramis peripheralis pallide brunnea, 50–90 × 40–75 µm.

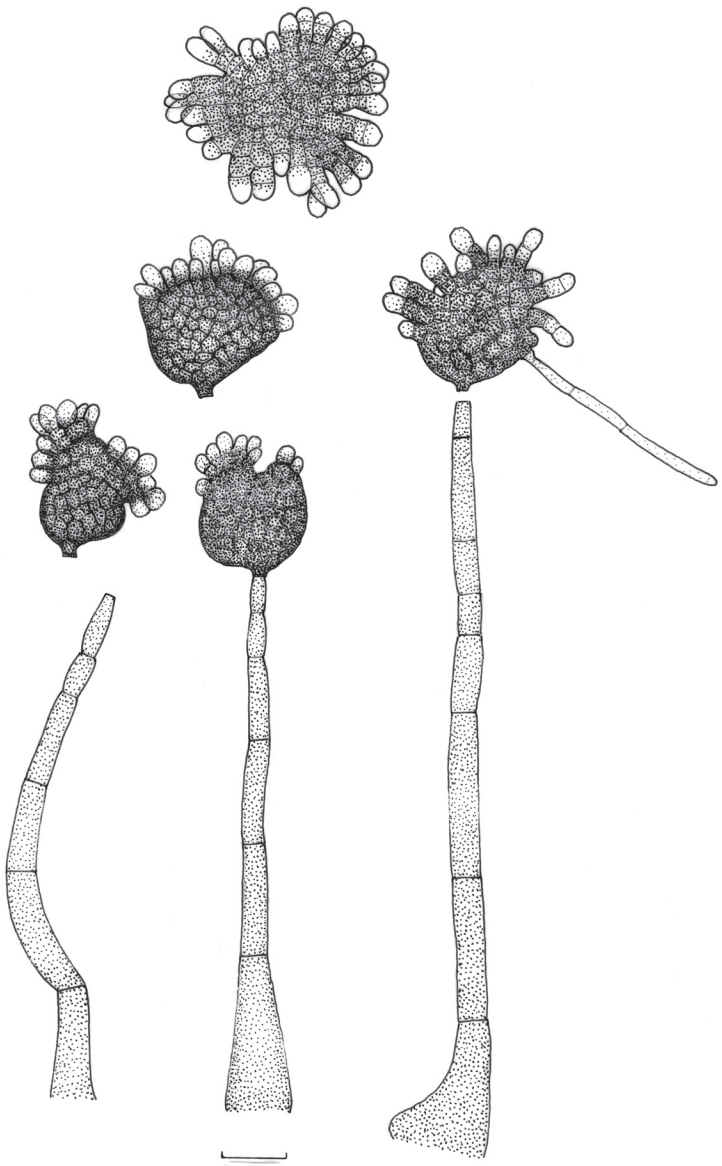

Fig. 1. ***Digitoramispora tambdisurlensis.*** Conidiophores and conidia.

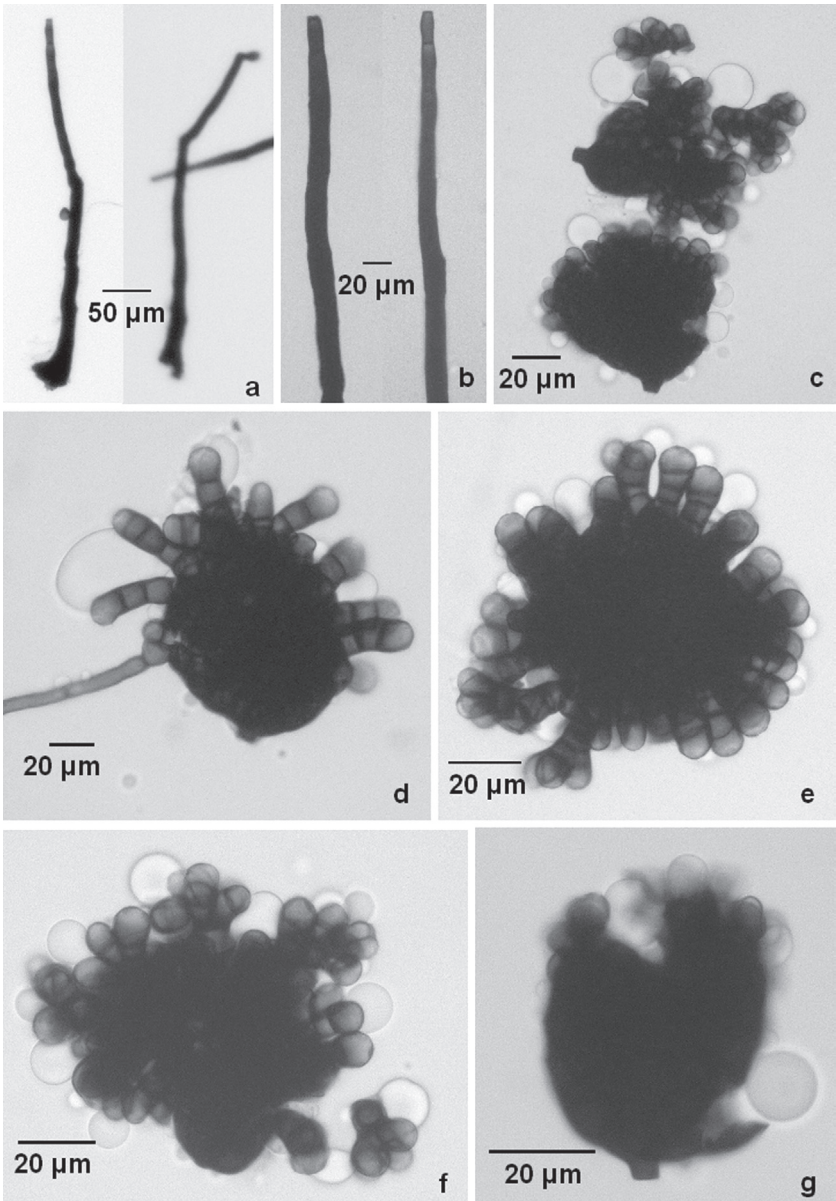

Fig. 2. ***Digitoramispora tambdisurlensis***.
a–b. Conidiophores; c–g. Conidia.

Holotype: On unidentified dead twig, 27.VII.2008, col. J. Pratibha, Tambdi Surla, Goa, India, Herb. No. HCIO 48773.

Conidial fungi, hyphomycetes. Colonies on natural substrate scattered, dark brown to black; mycelium partly superficial, partly immersed in the host tissue, composed of smooth, light brown, branched, septate hyphae, 2–3 µm wide. Colonies on PDA irregular, dark green, cottony, reverse black, margin serrated, attaining a diam. of 2.2 cm in 10 days at 25°C. Stroma none. Setae and hyphopodia absent. Conidiophores differentiated, single, erect, straight to slightly flexuous, unbranched, dark brown, sometimes extending, 220–320 × 7–15 µm. Conidiogenous cells monoblastic, integrated, terminal, cylindrical to lageniform, 10–17.5 × 5–10 µm. Conidia muriform or cheiroid, variable in shape, dorsiventrally flattened, fan-shaped, dark brown in the centre with peripheral light brown cells, 50–90 × 40–75 µm.

Notes: The genus *Digitoramispora* was established by Castañeda & Kendrick (1990) to accommodate two species: *D. caribensis* R.F. Castañeda & W.B. Kendr. and *D. excentrica* (B. Sutton) Castañeda & W.B. Kendr., with the former as type species. *D. excentrica* was originally described as *Acrodictys excentrica* B. Sutton and later transferred to *Arachnophora excentrica* (B. Sutton) S. Hughes. Subsequently, a third species has been accommodated in *Digitoramispora*, *D. lageniformis* Somrith. & E.B.G. Jones (Somrithipol & Jones 2003). The genus is characterized by pigmented, dictyosporous or sometimes cheiroid conidia with peripheral, hyaline or paler brown, short radiating branches (or cells) and irregularly, though often percurrently, extending conidiophores (Castañeda & Kendrick 1990). *D. tambdisurlensis* differs from the other three species in its much larger conidia and conidiophores (Table 1).

Table 1. Synopsis of *Digitoramispora*.

Species	Conidiophores	Conidia
D. caribensis	Extending percurrently, 20–55 × 5–6 µm	Central cells brown to black, distal cells hyaline to subhyaline, 15–20 × 10–15 µm
D. excentrica	Extending percurrently, 70–175 × 5–7 µm	Central cells blackish brown, distal cells pale brown, 13–18 × 12–17 µm
D. lageniformis	Extending percurrently, lageniform to ovoid, 105–150 × 6–6.5 µm	Central cells brown, distal cells hyaline to subhyaline, 37–45 × 28–32 µm
D. tambdisurlensis	Extending irregularly or percurrently, 220–320 × 7–15 µm	Central cells dark brown, distal cells pale brown, 50–90 × 40–75 µm

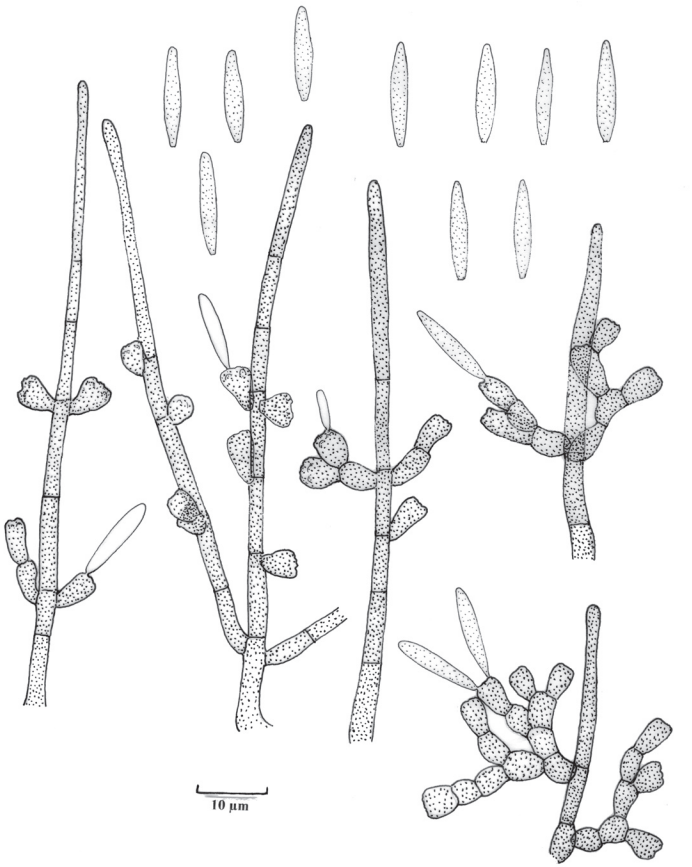

Fig. 3. ***Spondylocladiopsis aseptata***.
Conidiophores with conidiogenous cells and conidia.

Spondylocladiopsis aseptata Pratibha, Raghuk. & Bhat, **sp. nov.** Figs. 3, 4
MycoBank MB 512673

Ad fungos conidiales, hyphomycetes. Coloniae in substrato naturalis effusae, pallide brunneae, velutinae; mycelium partim superficialia, partim substrato immersum, ex hyphis laevibus, pallide brunneis, ramosis, septatis, 2–2.5 µm latis compositum. Coloniae in PDA-cultura circularis ad semicircularis, atro viridiae, planus, reverses nigrae, margine serratus, diam. 2.0 cm aetate 10 dierum. Stroma nullus. Setae absentia, conidiophora apicem sterilis et setiformis. Hyphopodia absentia. Conidiophora macronematica, mononematica, erecta, recta vel flexuosa, septata, laevia, ramosus ad basim, brunneae ad basim, terminans cum pallide brunnea to sub-hyalinae sterilis apicem, 45–115 × 2.5–5 µm. Cellulae conidiogenae polyblasticae, portatus directus in conidiophora vel in 1–4 sustinens cellulae, discretae, denticulatae, pallide brunneae, 4.5–8 × 3–6 µm. Conidia sicca, solitaria, laevia, sub-

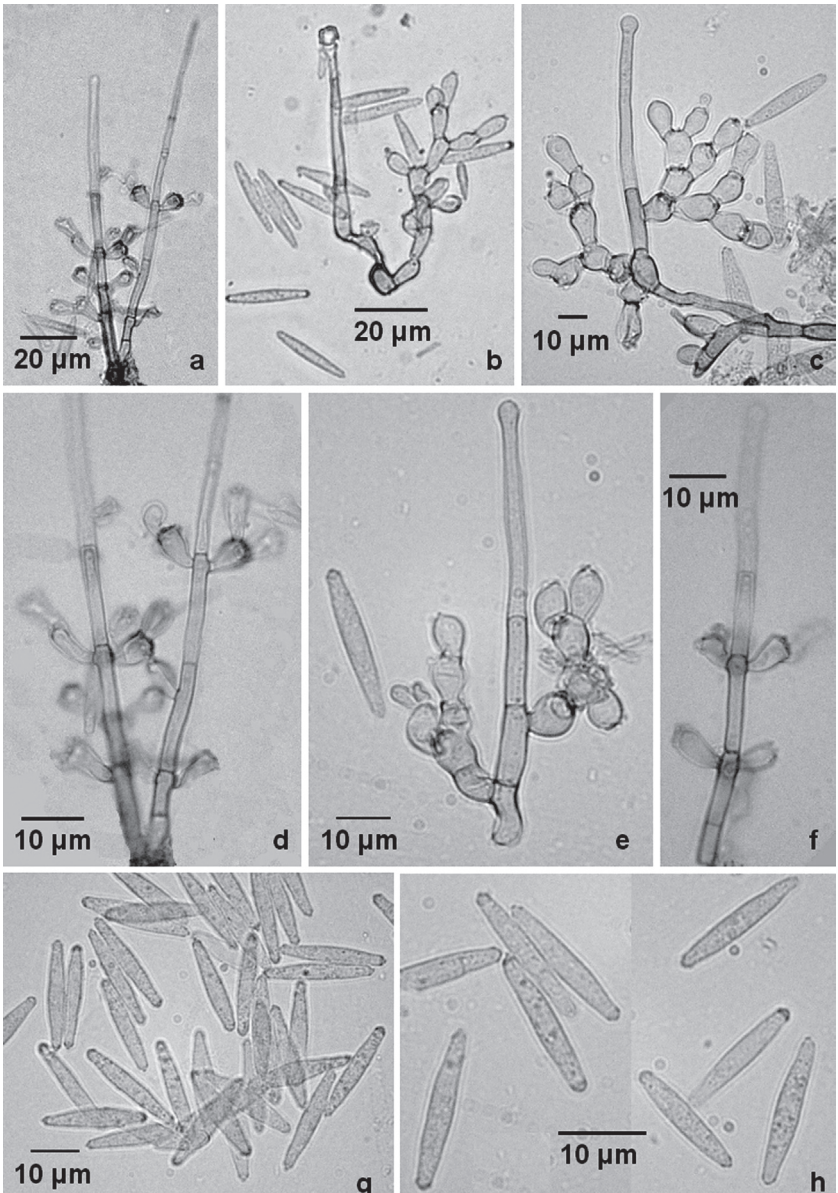

Fig. 4. ***Spondylocladiopsis aseptata***.
a–f. Conidiophores with polyblastic conidiogenous cells; g–h. Aseptate conidia.

hyalina, 0-septata, cylindrica vel fusiformis, rotundatus ad utrinque extrema, 13.5–23 × 2–4 µm.

Holotype: On leaf litter, 29.VIII.2008, col. J. Pratibha, Calicut, Kerala, India, Herb. No. HCIO 48774.

Conidial fungi, hyphomycetes. Colonies on natural substrate effuse, light brown, velvety; mycelium partly superficial, partly immersed in the host tissue, composed of smooth, light brown, branched, septate, 2–2.5 µm wide hyphae. Colonies on PDA circular to semi-circular, dark green, flat, reverse black, margin serrated, attaining a diam. of 2 cm in 10 days at 25 °C. Stroma none. Setae absent, but apex of the conidiophores sterile and setiform. Hyphopodia absent. Conidiophores differentiated, single, erect, straight to flexuous, septate, smooth, branched at the basal region, medium brown below, with a light brown to sub-hyaline, sterile apex, 45–115 × 2.5–5 µm. Conidiogenous cells polyblastic, discrete, borne directly on the conidiophore or on short branches of 1–4 supporting cells, denticulate, light brown, 4.5–8 × 3–6 µm. Conidia dry, solitary, smooth, sub-hyaline, 0-septate, cylindrical to fusiform, rounded at both ends, 13.5–23 × 2–4 µm.

Notes: The genus *Spondylocladiopsis,* with *S. cupulicola* M.B. Ellis as type species, was established by Ellis (1963) to accommodate fungi with polyblastic, discrete conidiogenous cells arranged in pairs or verticils on setiform conidiophores. Until now, the genus has been monotypic (Ellis 1971). *S. aseptata* differs from the type species by formation of aseptate conidia and conidiogenous cells developed on basal [supporting] cells borne on the conidiophore. The conidia in *S. cupulicola* are 2-septate and conidiogenous cells are directly borne on conidiophores (Table 2).

Table 2. Synopsis of *Spondylocladiopsis.*

Species	Conidiophores	Conidiogenous cells	Conidia
S. cupulicola	≤ 310 µm long, 6–8 µm thick at base	Borne directly on conidiophores, 5–10 µm long, 2–3.5 µm at base, 3.5–8 µm at apex	Cylindrical, 2-septate, 18–23 × 3–4 µm
S. aseptata	45–115 × 2.5–5 µm	Borne directly on conidiophores or with 1–4 supporting cells, 4.5–8 µm long, 3–3.5 µm at base, 3.5–6 µm at apex	Cylindrical to fusiform, 0-septate, 13.5–23 × 2–4 µm

Acknowledgments

We are indebted to Drs. Eric McKenzie, Landcare Research, New Zealand and Bryce Kendrick, Sidney, British Columbia, Canada, for kindly reviewing the manuscript. DJB thanks the Ministry of Environment & Forests and the University Grants Commission, New Delhi, for research support grant. We are further grateful to Mr. Ashish

Prabhugaonkar and Dr G. Senthilarasu for the material and to Dr P. Manimohan for help in organizing the field trip.

Literature cited

Castañeda RF, Kendrick B. 1990. Conidial fungi from Cuba: II. Univ. Waterloo Biol. Ser. 33: 1–61.

Ellis MB. 1963. Dematiaceous Hyphomycetes. IV. Mycol. Pap. 87:1–42.

Ellis MB. 1971. Dematiaceous Hyphomycetes. Commonwealth Mycological Institute, Kew, Surrey, England.

Somrithipol S, Jones EBG. 2003. *Digitoramispora lageniformis* sp. nov., a new graminicolous hyphomycete from Thailand. Nova Hedwigia 77: 373–378.